

UNIQUE PROCESS CHEMISTRY FOR ETCHING
ORGANIC LOW-K MATERIALS

Abstract of the Disclosure

Method for etching a feature in an integrated circuit wafer with minimized effect of
5 micromasking. The method introduces a flow of etchant gas including a fluorocarbon gas to
the wafer, and uses the etchant gas to form a plasma in proximity with at least a portion of the
wafer. The plasma is used to etch at least a portion of the feature in the wafer. Disassociation
of the fluorocarbon into fluorine and hydrocarbon species performs two functions. The
10 fluorine species prevents or significantly reduces sputtered hardmask components from
depositing on the floor of the etched feature during etching. The hydrocarbon species acts to
form a passivation layer on the sidewalls of the feature.